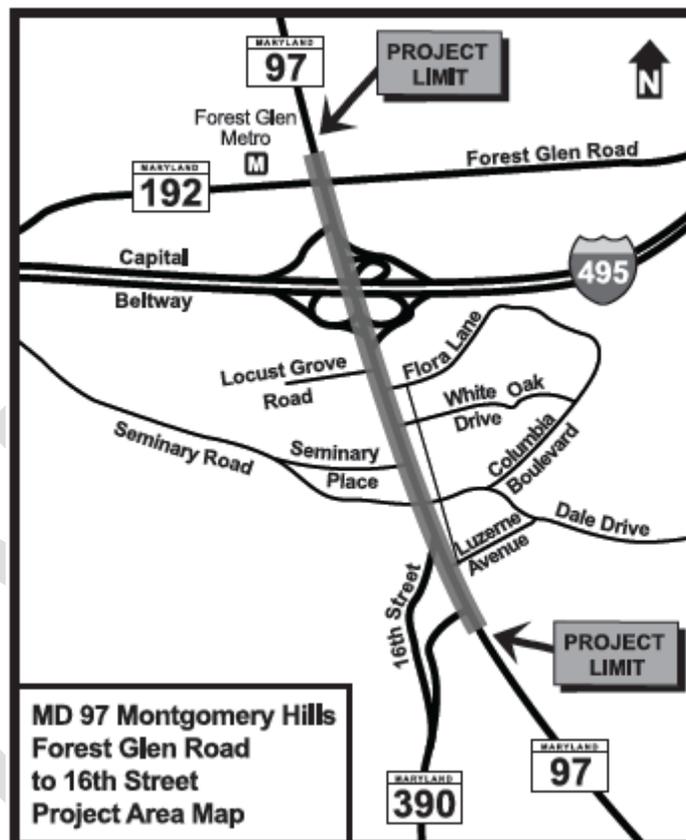


MD 97 Montgomery Hills Project Planning Study

from Forest Glen Road to 16th Street
Montgomery County, Maryland

ALTERNATIVES RETAINED FOR DETAILED STUDY



Maryland State Highway Administration
Office of Planning and Preliminary Engineering
707 North Calvert Street
Baltimore, Maryland 21202
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OVERVIEW

Introduction and Project Location

The Maryland State Highway Administration (SHA), Montgomery County, and the Federal Highway Administration (FHWA) are conducting a project planning study on MD 97 (Georgia Avenue) between MD 192 (Forest Glen Road) and MD 390 (16th Street), a distance of approximately 0.7 mile. The study area is located in Montgomery County, Maryland (see **Figure 1**).

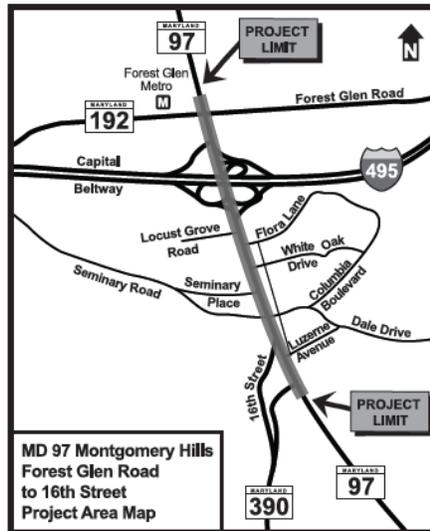


Figure 1: Project Location Map

Purpose of the Project

The purpose of the MD 97 Montgomery Hills Project Planning Study is to establish a balanced approach to transportation within the MD 97 corridor by evaluating existing vehicular, pedestrian, and bicyclist mobility and safety, while accommodating proposed transit enhancements and establishing a sense of place within the Montgomery Hills community that fosters business revitalization, neighborhood cohesion and multimodal accessibility.

The mix of local and regional (commuter) traffic, in conjunction with study area roadway and sidewalk conditions, creates an automobile-dominated environment not always supportive of other modes of transportation. As a result, pedestrian accessibility, bicycle connectivity, access to local businesses, and transit use have become major challenges within the project area.

Project Need

Existing Conditions

Between 16th Street and the Capital Beltway (I-495), the Georgia Avenue corridor has three travel lanes in each direction and a reversible center lane that provides a fourth lane SB in the morning and NB in the evening to accommodate commuters during peak periods. During non-peak travel periods, this reversible lane operates as a two-way center left-turn lane. No physical median exists along this portion of the corridor. Left turns from Georgia Avenue onto side streets are restricted during peak travel periods. Between I-495 and Forest Glen Road, Georgia Avenue consists of four travel lanes in each direction, separated by a median.

The posted project-area speed limit is 35 MPH. The following intersections along Georgia Avenue are signalized:

- Forest Glen Road
- I-495 Interchange ramps
- Seminary Place
- Seminary Road/Columbia Boulevard
- 16th Street (NB)

Approximately 42 commercial properties, 22 access points, three alleys for local access, and two county-owned public parking lots are located along Georgia Avenue. A grade-separated pedestrian/bicyclist facility crosses the Capital Beltway along the west side of Georgia Avenue. Crosswalks are provided at the five signalized intersections. Bus stops are located near Forest Glen Road and Seminary Place. An underground tunnel provides direct pedestrian access to the Forest Glen Metrorail Station near the intersection of Georgia Avenue and Forest Glen Road.

Traffic Operations

SHA developed Annual Average Daily Traffic (AADT) AM and PM peak-hour volumes for this study. 2011 Existing and 2040 Projected No-Build AADT and Percent Growth along Georgia Avenue are shown in Table 1.

Table 1 - 2011 Existing and 2040 Projected No-Build AADT

Georgia Avenue Segment	Annual Average Daily Traffic (Vehicles per Day)		
	2011	2040	Percent Growth
North of Forest Glen Road	65,000	75,000	15.3%
Forest Glen Road to I-495	73,000	84,000	15.1%
I-495 to Seminary Place	81,000	93,000	14.8%
Seminary Place to Seminary Road/Columbia Boulevard	71,000	82,000	15.5%
Seminary Road to SB 16 th Street	66,000	76,000	15.2%
SB 16 th Street to NB 16 th Street	51,000	59,000	15.7%
South of 16 th Street	35,000	41,000	17.1%

Table 2 indicates that the studied intersections operate at Level of Service (LOS) E or better under existing conditions. By 2040, traffic volumes are forecasted to increase and the LOS is expected to worsen under Alternative 1, the No-Build Alternative. Under 2040 Build

conditions (Alternatives 2-7), operations of some intersections will be better than operations under 2040 No-Build conditions (Alternative 1). These improved conditions are the result of improving transit access or adding travel lanes. However, some LOS will continue to fail under the Build Alternatives as a result of high traffic volumes. Additional factors that assess the needs of all transportation users are listed on the Measures of Effectiveness (MOE) chart in **Appendix A**.

Table 2 - Overview of 2011 Existing and 2040 Projected Traffic

Overview of 2011 Existing					and 2040 Traffic							
Signal Intersection LOS	2011 Existing Conditions				Alternative 1: No-Build				Alternative 2: Transportation Systems Management (TSM)/Transportation Demand Management (TDM)			
	AM		PM		AM		PM		AM		PM	
	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	
Forest Glen Road	E	79	E	58.6	F	156.4	F	164.7	F	164.6	F	154.2
IS 495 WB Ramp	A	9.5	B	13.4	B	17.8	B	17.8	B	16.7	B	10.2
IS 495 EB Ramp	D	54	C	23.4	F	91.3	F	89	E	73	D	54.1
Flora Lane												
Seminary Place	B	12.4	B	15.3	B	17.5	E	66	C	30.3	B	10.5
Seminary Road	D	37.3	C	34.3	F	271.6	F	469.3	F	276.8	F	214
16th Street (MD 390 NB)	C	24.3	D	50.3	B	16.3	B	15.7	C	22.2	F	87.6

Alternative 3: Master Plan					Alternative 4: 3 Lanes NB & SB					Alternative 5: 3 Lanes NB, 4 SB				
Signal Intersection LOS	AM		PM		AM		PM		AM		PM			
	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)			
	Forest Glen Road	F	80	F	221.4	F	169.3	F	169.3	F	161.4	F	134.7	
IS 495 WB Ramp	E	71.2	C	28.4	B	16.9	B	10.2	C	20.9	A	7.7		
IS 495 EB Ramp	F	87.1	E	72.2	E	68.2	D	54.7	F	101.6	D	52.9		
Flora Lane	A	6.4	A	3.9										
Seminary Place	D	43.5	D	37.7	F	110.4	E	62.6	D	37.2	E	59		
Seminary Road	F	85.7	F	104.8	F	208.2	F	140.8	F	125.7	F	119.8		
16th Street (MD 390 NB)	C	27.1	E	76	E	71	E	72.7	E	77.9	C	24.6		

Alternative 6: Bus Rapid Transit					Alternative 7: Georgia Avenue Tunnel				
Signal Intersection LOS	AM		PM		AM		PM		
	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)	Delay (sec)		
	Forest Glen Road	F	117.3	F	84.1	E	63.2	D	50.2
IS 495 WB Ramp	C	35.3	A	9.8	A	6.5	D	54.2	
IS 495 EB Ramp	F	111.8	D	77.8	C	24.9	E	56.7	
Flora Lane									
Seminary Place	C	31.4	B	14.6	B	16.4	B	19.4	
Seminary Road	E	95.6	D	43.8	C	30	D	47.9	
16th Street (MD 390 NB)	C	57.3	B	23.8	B	18.2	F	80.5	

LOS	Time (sec)
A	≤ 10
B	10-20
C	20-35
D	35-55
E	55-80
F	≥ 80

Delay (sec) represents the average time needed for a vehicle to pass through the intersection.

Level of Service (LOS) is a measure of congestion experienced by drivers. LOS ranges from A (free flow with little or no congestion) to F (failure with stop-and-go conditions).

Safety

Three hundred eighty police-reported crashes occurred during the three-year period from 2007 through 2009. Approximately 150 of those crashes (40 percent) resulted in injuries. No fatalities were documented. Rear-end, sideswipe, left-turn, angle, pedestrian, and truck-related crashes each occurred at a rate significantly higher than the statewide average for those types of crashes on similar roadways. **Figure 2** illustrates the distribution of crashes.

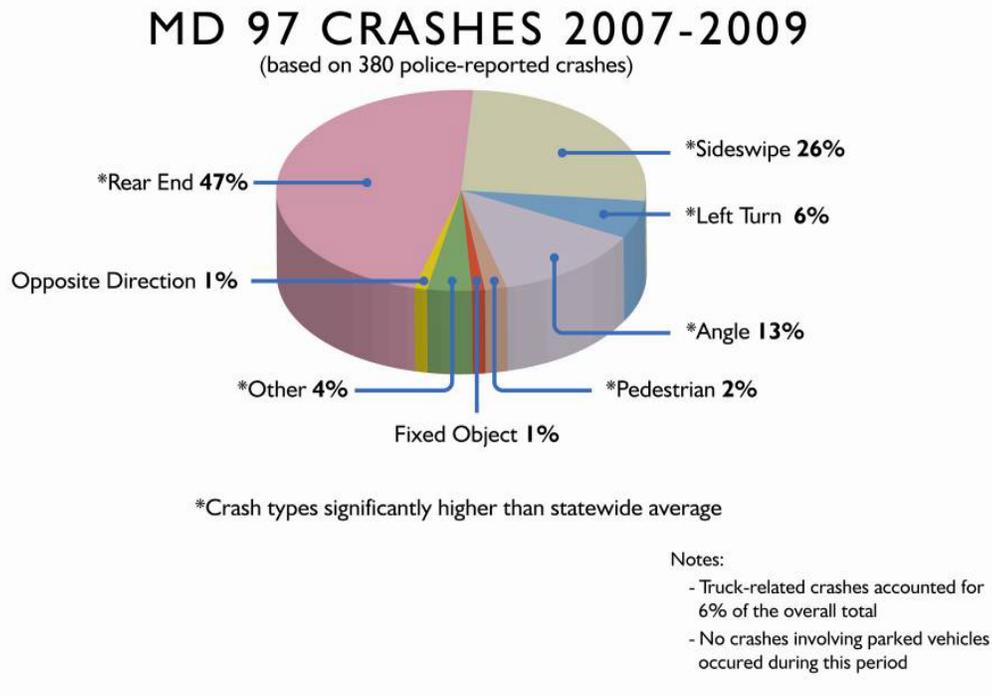


Figure 2: MD 97 Police Reported Crashes 2007-2009

Pedestrian and Bicyclist Access

Sidewalks along this corridor are generally non-compliant with Americans with Disabilities Act (ADA) standards. Signs and utility poles on sidewalks in both directions along Georgia Avenue present numerous obstacles and reduced-width areas for people who use wheelchairs. Those who walk or bicycle through the project study area must constantly be alert for approaching vehicular traffic, drivers exiting the access points, and drivers turning from the uncontrolled center turn lane during off-peak periods. **Table 3** summarizes pedestrian counts in 2011.

Table 3 - Pedestrian Counts

2011 Existing Pedestrian Count		
MD 97 Intersections	AM Peak Hour	PM Peak Hour
Forest Glen Road (MD 192)	167	89
Locust Grove Road	21	25
Flora Lane	7	22
White Oak Drive	8	4
Seminary Place	37	47
Seminary Road / Columbia Boulevard	25	81
Corwin Drive	12	12
16 th Street	9	2

Note: These counts include the movements along all the legs of the intersections

Transit Accessibility

Transit accessibility is impeded by several factors, including large traffic volumes and the pedestrian and bicyclist obstacles listed in the preceding section. Peak-period restrictions on left turns from Georgia Avenue onto Forest Glen Road and relatively short signal times for pedestrians crossing Georgia Avenue make commuter access to the Forest Glen Metrorail Station difficult, especially during peak periods. Persons with disabilities may also have limited access to the station from Georgia Avenue, and the County is evaluating an additional pedestrian tunnel at the intersection of Forest Glen and Georgia Avenue to help address that situation.

Establishing a Sense of Place

The project seeks to maintain the character of the community and establish a sense of place along the project corridor. As you travel north and south along Georgia Avenue land uses typically shift fairly readily between distinct commercial districts and predominately residential areas, but the Montgomery Hills Corridor uniquely and seamlessly integrates both of these land use typologies together creating a cohesive communal environment. During conversations with various members of the public it is apparent that the Montgomery Hills Community considers the commercial area and the surrounding residential community as one cohesive unit and evaluating ways to further integrate and remove physical barriers has been a documented goal from the very beginning of the project.

Existing conditions create a disorienting environment for motorists, especially for those exiting and entering I-495. The reversible center turn lane may cause apprehension among motorists unfamiliar with the corridor and confused by the cluttered signage and unclear lane markings. Deteriorating and insufficient pedestrian and bicycle facilities need to be improved to support the overall enhancement of the corridor, as envisioned in the *North and West Silver Spring Master Plan*. The use of aesthetic enhancements and upgraded facilities to establish a transportation system homogeneous in appearance throughout the corridor will help define the character of the community and distinguish it from neighboring communities.

As a secondary goal, clearly delineated and consolidated access points to businesses, coupled with the promotion of aesthetics, would be key to increasing the attractiveness of businesses and the corridor as a whole. All of these elements, when evaluated as an aggregate, will help beautify the corridor and provide the infrastructure needed to foster business revitalization, neighborhood cohesion, and multimodal connectivity throughout the Montgomery Hills community.

Currently the Montgomery Hills Corridor is seen as a vehicular-centric stretch of road with considerable safety concerns, minimal bike / pedestrian accommodations, circuitous accessibility and limited beautification opportunities. The ultimate goal of the “Sense of Place” purpose and need statement is for commuters, residents and business patrons to view the Montgomery Hills Community as a distinct destination along the MD 97 corridor with a healthy mix of vibrant commercial areas, residential amenities, multimodal accessibility and inviting aesthetic enhancements.

Public Involvement

The MD 97 Montgomery Hills Project Planning Study, a joint project between SHA and Montgomery County, was initiated in July 2011.

Purpose and Need Open House

The Project Team held a Purpose and Need Open House on March 13, 2012, at Woodlin Elementary School in Silver Spring to introduce the public to the study and solicit comments. Seventy-five people attended.

Comment cards included in the February 2012 project initiation newsletter allowed study area residents, business owners, and commuters to share project-related information. The Project Team received 776 responses, which include 650 and 126 received by mail and the Survey Monkey via the SHA's project website. Comment card, survey responses, and an Open House exercise indicated that:

- Most respondents travel the Georgia Avenue corridor by car;
- The most popular destinations (in order) for those who travel within the study area are home, shopping, and work;
- Top problems include traffic congestion, unsafe pedestrian facilities, unattractive study area, and left-turn restrictions;
- Top suggestions for improving the Montgomery Hills study area include better intersections and signals, safer pedestrian facilities, consolidated business access, and removal of the reversible lane; and
- Most respondents expressed concern about increased congestion and traffic, limited access to local businesses and residential side-streets during construction, and impacts on homes and businesses.

Most Open House attendees cited unobstructed pedestrian access (23%), increased safety (22%), and established sense of place (18%) as the main improvements needed within the study area.

Targeted Meetings

The Project Team held and attended the following meetings to present project information and answer project-specific questions:

- Woodside Park - October 12, 2011
- Silver Spring Chamber Of Commerce - March 1, 2012
- Business Owners - March 19, 2012
- Linden Civic Association - June 20, 2012
- Lyttonsville Community - August 2, 2012
- Forest Estate-Northmont - November 1, 2012
- Adjacent Property Owners – May 9, 2013
- Locust Grove Community resident - June 19, 2013
- Shopping Center Owners - June 20, 2013

Stakeholder Group

The Project Team formed an 18-member Stakeholder Group representing civic associations, faith communities, Holy Cross Hospital, area businesses, bicycle proponents, Montgomery County Chamber of Commerce, commuters, residents, transit users, and other members recommended by local elected officials. Stakeholder Meetings were held on the following dates:

- October 17, 2012
- November 14, 2012
- March 17, 2013
- June 11, 2013
- October 16, 2013

The frequency with which Stakeholder Meetings will be held during subsequent phases of the Project Planning Process will be determined as new project information becomes available. The team expects to hold at least one meeting before the public hearing. The current list of stakeholders has been included in **Appendix B**.

Alternatives Public Workshop

An Alternatives Public Workshop was held at Woodlin Elementary School on June 25, 2013, to present the results of the preliminary planning study. SHA provided the following information for each of the seven alternatives and two options presented at the workshop: estimated cost, right-of-way requirements, displacements, number of properties impacted, and estimated natural environmental impacts. The 118 people who attended the workshop included local residents and business owners, community leaders, and county representatives.

Public preference for Build Alternatives 3 - 7 is quite close. Based on written comments provided during and after the workshop, Alternatives 4 and 5 were ranked equally favorable, followed by (in order) Alternative 7, Alternatives 3 and 5, Alternative 1, and Alternative 2. **Table 4** provides the number of favorable responses for each alternative and option. A summary of workshop comments is found in **Appendix C**

Table 4 - Summary of Total Responses and Ranking Preferences

	Alt.1 No-Build	Alt. 2 TSM-TDM	Alt. 3. Master Plan	Alt. 4 3 Ln NB & SB	Alt. 5 3 Ln NB & 4 Ln. SB	Alt. 6 BRT	Alt. 7 Georgia Ave. Tunnel	Option A Queue Jump	Option B Seminary Place Closed
Total Responses	17	13	31	36	36	31	34	29	15
Ranking Preference	4	5	3	1		3	2	1	2

SHA will publish a newsletter to update the public about the Alternatives Retained for Detailed Study (ARDS) in Spring 2014. The Location/Design Public Hearing is expected to be held in Spring 2015.

Coordination Plan

The Project Team has developed a Public Involvement Coordination Plan that defines the process by which SHA will communicate information about the MD 97 Montgomery Hills Project Planning Study to participating agencies and the public. The plan also identifies ways in which comments from agencies and the public will be requested and considered.

INITIAL CONCEPTS AND PRELIMINARY ALTERNATIVES DESCRIPTION

Initial Concepts Considered

Concept 1: No-Build (7-lane section with center reversible travel lane)

The No-Build concept includes only minor short-term improvements that would occur as part of routine maintenance and safety operations.

Concept 2: Master Plan (3 to 4 lanes NB and 4 lanes SB, with center median)

The master plan concept maintains three travel lanes on Georgia Avenue in the NB direction that widens to four lanes north of Seminary Place and has four continuous lanes in the SB direction from the Capital Beltway to 16th Street. Concept 2 also has a center median, a proposed traffic signal at Flora Lane, and accommodations for left-turning vehicles at Forest Glen Road. The Forest Glen Road intersection design is consistent with most of the Build Concepts. The Master Plan Concept includes no on-road bicycle lanes and maintains a typical section that varies in width from 120 to 131 feet.

Concept 3: 3 Lanes NB and SB (with center median)

To minimize right of way impacts, this concept maintains three travel lanes in both directions on Georgia Avenue, with a center grass median and wider outside lane for bicycle accommodations. The concept also modifies the 16th Street ramps by combining them at a 90-degree connection with Georgia Avenue. The 16th Street concept is consistent with most of the Build Concepts. To address the congestion caused by vehicles lining up on Georgia Avenue to enter the car wash, the Project Team also proposed an option that redirects car-wash traffic to the rear entrance of the building through a portion of the shopping center parking lot. This option is consistent with most of the concepts.

Concept 4A: 3 Lanes NB and 4 Lanes SB (with center median)

To minimize the anticipated traffic impacts of the proposed concepts on the Capital Beltway, SHA developed Concept 4A. This concept, which includes a center grass median, has three lanes in the NB direction and four lanes in the critical SB direction on Georgia Avenue. Concept 4A includes a wider outside travel lane to accommodate bicycles and follows the centerline of the existing roadway.

Concept 4B: 3 Lanes NB and 4 Lanes SB (with center median and centerline shift)

This option mirrors the layout of Concept 4A's typical section but changes the centerline of the roadway when necessary. To maximize the available right-of-way and ultimately minimize property impacts, SHA introduced a relatively flat centerline curve into the roadway design just north of Columbia Boulevard.

Concept 5: 3 Lanes NB and 4 Lanes SB (with center median and closure of Seminary Place)

This concept proposes removing the traffic signal at Seminary Place and making the intersection right-in, right-out only. Vehicles wishing to turn left (north) onto Georgia Avenue would be shifted to Seminary Road. SHA would also introduce a traffic signal at Flora Lane to provide improved pedestrian and bicycle access across Georgia Avenue.

Concept 6: Bus Rapid Transit (dedicated lane)

This concept was developed in accordance with comments received from members of the Maryland-National Capital Park and Planning Commission (M-NCPPC). Concept 6 recommends repurposing the outside travel lane on Georgia Avenue as a dedicated Bus Rapid Transit (BRT) lane.

Concept 7: Transit Signal Priority/Queue Jumps (with center median)

To more efficiently accommodate transit through the corridor, this concept includes BRT queue jumps and Transit Signal Priority at intersections along Georgia Avenue.

Concept 8: Transportation Systems Management /Transportation Demand Management (TSM/ TDM)

The TSM/TDM concept, with minimal right-of-way disruption, attempts to optimize existing conditions while addressing aspects of the project's purpose and need. This concept includes some of Concept 7's Transit Signal Priority and queue jump benefits and adds access consolidation to improve connectivity while keeping the center reversible turn lane in place.

Preliminary Alternatives

Based on comments from members of the public and representatives of Montgomery County and coordination with the regulatory agencies, the Project Team finalized the preliminary alternatives and presented them at the Alternatives Public Workshop on June 25, 2013, which are shown in **Appendix D**.

Alternative 1 – No-Build

No major improvements would be added under the No-Build Alternative. Minor short-term improvements would occur as part of routine maintenance and safety operations. This alternative serves as a baseline for comparing the impacts and benefits associated with the other Build Alternatives.

Alternative 2 – Transportation Systems Management/Transportation Demand Management (TSM/TDM)

Alternative 2 would include improvements at existing signalized intersections, Transit Signal Priority (TSP), queue jumps, and access consolidation. TSP allows approaching buses to call the transmitter at a signalized intersection to modify the signal timing and allow the bus to pass through the intersection without stopping. Queue jumps allow approaching buses at signalized intersections to move to the front of through traffic on a green light. Access consolidation increases safety and improves the flow of vehicular traffic by minimizing disruptions caused by turning vehicles. TDM, or actions that result in the reduction of peak-period and/or overall travel demand, would be accomplished with the implementation of these improvements. The center reversible lane would be maintained.

Alternative 3 - Master Plan

The Master Plan Alternative is consistent with the Maryland-National Capital Park and Planning Commission's *North and West Silver Spring Master Plan* (adopted in 2000). This

alternative consists of four travel lanes in the SB direction and a 16-foot-wide grass median that would replace the center turn lane. The NB direction would maintain three travel lanes from 16th Street to Seminary Place and four travel lanes from Seminary Place through Forest Glen Road. This alternative would also include a 13.5-foot-wide sidewalk on both sides of Georgia Avenue.

Alternative 4 – Three Lanes NB and SB

Alternative 4 has three travel lanes in each direction, with a 17-foot-wide grass median. The outer travel lane in each direction would be 14 to 16 feet wide to accommodate on-road bicycles. A five-foot-wide sidewalk with a five-foot-wide buffer would be located on either side of Georgia Avenue. Left-turn lanes would be provided on Georgia Avenue at the intersections with Forest Glen Road, Seminary Place, and Seminary Road. The ramp to 16th Street SB would be relocated to the signalized intersection at the NB roadway to create a more traditional three-way intersection.

Alternative 5 – Four Lanes SB and Three Lanes NB

Alternative 5 would provide four lanes in the SB direction, three lanes in the NB direction, and a 17-foot-wide grass median. The centerline would be shifted slightly in an effort to minimize impacts on neighboring businesses. As in Alternative 4, this alternative would include wider outer lanes for bicycle use, five-foot-wide sidewalks with buffers, and the same shift in the 16th Street ramp.

Alternative 6 – Bus Rapid Transit (BRT)

Alternative 6, developed in accordance with Phase II of M-NCPPC's Staff Draft *Countywide Transit Corridors Functional Master Plan*, proposes a two-lane/two-way BRT median busway along Georgia Avenue, with three general-use travel lanes in each direction on either side of the busway. Left-turn movements would be prohibited. A 14- to 16-foot-wide outer lane for on-road bicycle accommodations and a five-foot-wide sidewalk with a five-foot-wide buffer for pedestrians would also be provided.

Alternative 7 – Georgia Avenue Tunnel

Alternative 7, developed in response to stakeholders' requests, proposes a four-lane tunnel from south of the I-495 Interchange to just south of 16th Street, with three surface travel lanes in each direction. The surface level would include a 25-foot-wide grass median. Only vehicles traveling along Georgia Avenue and turning westbound (WB) from I-495 to southbound Georgia Avenue would be accommodated by the tunnel. Eastbound (EB) Beltway traffic to SB Georgia Avenue, NB Georgia Avenue traffic to the Beltway, SB traffic wishing to access 16th Street, and local traffic would remain on the surface travel lanes. This alternative would also provide five-foot-wide sidewalks with five-foot-wide buffers and a 16-foot-wide outside travel lane to accommodate bicycles.

Intersection Options

Option A – Queue Jumps/Transit Signal Priority (Compatible with All Build Alternatives)

Option A would include queue jumps on Georgia Avenue near the Forest Glen Road and Seminary Place intersections, coupled with TSP to improve transit access. Queue jumps are short auxiliary lanes that can be combined with right-turn lanes to allow buses traveling

through intersections along the corridor to enter the queue-jump lanes to receive a green signal that would allow them to move to the front of through traffic. TSP is an operational strategy in which approaching transit vehicles send a call to the traffic signal, which modifies the signal timing to improve the chances of the transit vehicle’s passing through the intersection without stopping. TSP, coupled with queue jumps, would help improve overall travel times of transit vehicles.

Option B – Signal Relocation/Modification (Compatible with Alternative 5 Only)

Option B would remove the traffic signal at Seminary Place and replace it with a right-in/right-out connection with Georgia Avenue. Vehicles attempting to turn left to travel north on Georgia Avenue would be shifted onto Seminary Road. A traffic signal would be added at Flora Lane to provide improved pedestrian and bicyclist access across Georgia Avenue. Eliminating the Seminary Place signal would increase the spacing between signalized intersections and help lessen queuing on Georgia Avenue but could also result in longer back-ups along Seminary Road during peak periods.

Measures of Effectiveness (MOE)

The team developed the MOE chart as an additional tool to evaluate preliminary alternatives. This additional information is considered in the alternatives analysis, as it supports SHA’s Complete Streets policy. Although vehicular traffic is the only measure typically used in project evaluation, as stated in the Purpose and Need Statement, the MD 97 Montgomery Hills Project Planning Study focuses on balancing vehicular, bicycle, and pedestrian movements and improving safety and transit accessibility. **Appendix A** identifies the other measures analyzed for the preliminary alternatives.

Alternatives Dropped from and Retained for Detailed Study

Comments were received from the public at the June 25, 2013 Alternatives Public Workshop, via comment cards, from, members of the Stakeholder Group, and from representatives of Montgomery County. Based on these comments, along with the findings from preliminary analyses, the Project Team is recommending Alternatives to be dropped, and Alternatives to be retained. Table 5 summarizes Alternatives Not Recommended for detailed study, and Table 6 summarizes Alternatives Recommended for Detailed Study.

Table 5 - Alternatives Not Recommended for Detailed Study

Alternatives	Reasons for Dropping	Considerations
Alt. 4 – Three Lanes NB & SB	Although Alt. 4 would have fewer impacts than some of the other Build Alternatives, travel-lane capacity would be reduced from seven lanes (including the reversible center turn lane) to six (three lanes in each direction). This reduction would negatively affect traffic operations within the corridor and possibly on I-495.	<ul style="list-style-type: none"> • Removing a travel lane would increase delays in this high-volume traffic area • 4-18 possible displacements • 64 of 485 parking spots impacted • The higher congestion volumes may detract from the sense of place purpose and need goal for the project
Alt. 6 – Bus Rapid Transit (BRT)	The median busway would decrease the number of all-purpose travel lanes from seven to six and could negatively affect traffic operations along the corridor. The absence of left-turn bays would make left turns difficult and limit access to surrounding businesses and neighborhoods. Alt 6 allows for minimal improvements in pedestrian/bicyclist access	<ul style="list-style-type: none"> • Would reduce travel lanes by one • Bus lane would prohibit left- turn movements • Absence of grass median would not allow refuge for pedestrians crossing

	<p>through the corridor and offers few options for aesthetics. Phase 1 of the current BRT Study, which only calls for general-use transit access through the Montgomery Hills corridor, is consistent with all recommended alternatives.</p>	<p>Georgia Avenue</p> <ul style="list-style-type: none"> ● Absence of green area would limit aesthetic improvements, which may be counter to sense of place objectives ● 8-24 possible displacements ● 61 of 485 parking spots impacted
<p>Alt. 7 – Georgia Avenue Tunnel</p>	<p>The constructability concerns, increased displacements / impacts, and long-term maintenance costs associated with the Tunnel Alternative tend to outweigh any traffic or aesthetic benefits derived from removing surface traffic on mainline MD 97 from the Montgomery Hills Corridor.</p> <p>Other concerns include the tunnel's ability to accommodate only a limited percentage of vehicles because of the close proximity of major traffic generators like the I-495 Interchange and 16th Street. During construction, maintenance of traffic (MOT) would be difficult and could reduce the number of travel lanes by three or four an extended period of time. The close proximity of the Beltway and its limited access would make suitable detours difficult, and the three-to-four-year construction period could adversely impact area businesses.</p>	<ul style="list-style-type: none"> ● Would make MOT during construction difficult ● MOT could have a higher level of impact on businesses during construction ● Would capture only one major traffic movement in the tunnel, with most of the others still on the surface ● Construction could greatly increase displacements ● Vibration during construction could pose structural concerns for adjacent businesses ● Long-term maintenance costs (ventilation, tunnel lighting, etc.) would exceed all other alternatives ● Most expensive alternative ● 4-26 possible displacements ● 78 of 485 parking spots impacted ● The tunnel may offer additional room for aesthetic enhancements on the surface, which could potentially help with establishing a better sense of place within the community, but with the tunnel acting a bypass of Montgomery Hills it could be viewed as a deterrent to that particular purpose and need goal as well.

Table 6 - Alternatives Recommended for Detailed Study

Alternative	Reasons for Moving Forward	Considerations
Alt. 1 – No Build	Moving forward as the baseline alternative to which the costs, benefits, and impacts of the Build Alternatives can be compared.	<ul style="list-style-type: none"> • Would minimize cost • Would maintain current traffic patterns • Would require no displacements • Offers no Sense of Place benefit.
Alt. 2 – TSM/TDM	Moving forward as a low-cost Build Alternative, providing minor improvements to bicycle and transit access throughout the corridor. Upgrades at intersections would help improve overall safety and Level of Service while minimizing impacts and displacements. Would also provide on-road bicycle lanes and a grass buffer between the ADA-compatible sidewalk and the roadway for increased bicycle and pedestrian safety and comfort.	<ul style="list-style-type: none"> • Low-cost alternative • Would create minimal impacts • Would improve traffic and safety • Would provide pedestrian and bicycle enhancements • Would include wide ADA-compatible sidewalks • 2-13 possible displacements • 37 of 485 parking spots impacted • Offers very little Sense of Place benefit.
Alt. 3 – Master Plan	Moving forward as a consistent alternative to the county-approved Master Plan. Would maintain existing condition of seven lanes (including the converted center reversible lane): three lanes NB and four lanes SB. Includes left-turn bays, a median for safety and aesthetic improvement, and wide ADA-compatible sidewalks for increased pedestrian safety and comfort.	<ul style="list-style-type: none"> • Would provide grass median, aesthetics, and traffic calming and improve pedestrian safety • Would maintain seven travel lanes • Would include a new intersection at Flora Lane • Would include wide ADA-compatible sidewalks • 10-27 possible displacements • 62 of 485 parking spots impacted • Provides a number of opportunities for establishing an improved Sense of Place along the corridor
Alt. 5 – Four Lanes SB & Three Lanes NB	Moving forward as a similar alternative to the Master Plan. Would provide similar capacity improvements with fewer impacts due to a slight adjustment to the centerline of the roadway and maintenance of only three NB lanes beyond Seminary Place. Would provide on-road bicycle lanes and a grass buffer between the ADA-compatible sidewalk and the roadway for increased bicycle and pedestrian safety and comfort.	<ul style="list-style-type: none"> • Would provide grass median, aesthetics, and traffic calming and improve pedestrian safety • Would maintain seven travel lanes • Would require fewer displacements than Alt. 3 • Would include ADA-compatible sidewalks with buffer • Would enhance transit accessibility • 6-26 possible displacements • 67 of 485 parking spots impacted • Provides a number of opportunities for establishing an improved Sense of Place along the corridor
Options		
Option A – Queue Jumps/TSP	Would provide a generally low-cost option that could be implemented in any Build Alternative to help improve transit vehicle travel times throughout the area. Improved travel times could provide an incentive for increased use of the transit system.	<ul style="list-style-type: none"> • Low-cost option • Would improve transit vehicle travel times • Could be implemented with any Build Alternative
Option B – Signal Relocation/Modification	Would help balance the spacing between signalized intersections in the area and reduce queuing on Georgia Avenue. The added signal at Flora Lane would improve pedestrian and bicyclist access across Georgia Avenue.	<ul style="list-style-type: none"> • Would increase spacing between signalized intersections • Would improve pedestrian and bicyclist access across Georgia Avenue • Would improve queue lengths on Georgia Avenue • Vehicles attempting to turn left onto Georgia Avenue would shift from Seminary Place to Seminary Road

ENVIRONMENTAL INVENTORY

Introduction

SHA has conducted a preliminary environmental inventory to identify the socioeconomic, cultural, and natural environmental resources within the study area. A preliminary assessment of impacts that could result from the alternatives under consideration is included in **Table 5**. A more detailed evaluation of environmental impacts, including air and noise analyses, will be developed as part of the next stage of the Project Planning Process.

Land Use

The project is located within the *Montgomery Hills Proposed Concept*, which is included in the *North and West Silver Spring Master Plan*, a local master plan adopted by M-NCPPC in 2000. The MD 97 Montgomery Hills Project Planning Study will include an evaluation of the plan envisioned in the Master Plan for the Georgia Avenue corridor within the study limits. The *Smart Growth Priority Funding Areas Act of 1997* was enacted to limit sprawl and direct state funding for growth-related projects toward county-designated Priority Funding Areas (PFAs). The MD 97 Montgomery Hills study area is located entirely within a designated PFA, and the project is consistent with Maryland's *Smart Growth Initiatives*.

Socioeconomic Resources

SHA owns approximately 100 feet of right-of-way along the Georgia Avenue corridor within the study limits. Additional right-of-way (parcels and buildings) along the corridor will be required to accommodate proposed additional roadway reconfigurations to address the project's purpose and need. Right-of-way impacts and displacements are provided as ranges in **Table 7** and will be revised during detailed analysis. No parks or recreational areas are located within the study area.

In compliance with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, SHA will avoid disproportionately high and/or adverse effects on minority and low-income populations throughout the study area. A review of census data has revealed the presence of minority and low-income populations within the project study area. Further outreach and additional research of study-area demographic and economic characteristics will be completed as the study progresses.

Cultural Resources

Two study-area properties (Grace Episcopal Cemetery and Confederate Monument, and Calvary Evangelical Lutheran Church) are eligible for listing in the National Register of Historic Places (NRHP). SHA determined the properties' eligibility for the NRHP, and the Maryland Historical Trust concurred. The project will be reassessed upon further development of detailed design for the Build Alternatives, and efforts will be made to minimize impacts on these properties. Any use of a significant historic site will require further evaluation under Section 4(f) of the *Department of Transportation Act of 1966*.

Natural Environmental Features

A field investigation revealed no streams or wetlands within the project study area, which is located entirely outside any 100-year floodplains. Up to 0.8 acre of trees, located within

existing SHA right-of-way, will be impacted by the project. This project is not located within the Chesapeake and Atlantic Coastal Bays Critical Area. The U.S. Fish and Wildlife Service and the Maryland Department of Natural Resources Wildlife and Heritage Service have indicated that no state or federal rare, threatened, or endangered species are known to exist within the project area.

Four gas stations and three dry cleaners are located within the study area. These types of businesses typically generate, handle, or store hazardous materials or petroleum products. A detailed hazardous materials assessment will be conducted and detailed air-quality and noise analyses will be prepared during the next stage of the project planning study.

Agency Coordination

The Project Team has been coordinating with the agencies throughout the planning process. The Purpose and Need Field Review meeting was held on May 31, 2012, and the Purpose and Need Document was presented at the June 11, 2012 Interagency Review Meeting. Agency comments were incorporated into a revised Purpose and Need Document, which was made available to the agencies in July 2012. The Project Team presented preliminary alternatives to agency representatives at the February 2013 Interagency Review Meeting. Coordination regarding study-area resources is detailed in the Environmental Inventory section of this document.

After FHWA approves the ARDS package, SHA expects to distribute the document to agency representatives in January 2014 and present the ARDS at the February 2014 Interagency Review Meeting.

Table 7 - Summary of Potential Impacts and Estimated Costs Presented at the Alternatives Public Workshop

SUMMARY OF IMPACTS

Resource Category		Alternative 1 No - Build 3 Lanes NB, 3 Lanes SB, center reversible lane	Alternative 2 TSM/TDM 3 Lanes NB, 3 Lanes SB, center reversible lane	Alternative 3: Master Plan 3 to 4 lanes NB, 4 lanes SB, center median	Alternative 4: 3 lanes NB and SB, center median	Alternative 5: 3 lanes NB, 4 lanes SB, center median	Alternative 6: BRT 3 lanes NB, 3 lanes SB, 2 center bus lanes	Alternative 7: Georgia Ave Tunnel 6 surface lanes (3 NB, 3 SB), 4 tunnel lanes (2 NB, 2 SB)
Potential Displacements (Number)								
Residential	Alternative	0	0	0	0	0	0	0
	Option	N/A	N/A	N/A	0	0	N/A	N/A
Commercial	Alternative	0	2 - 13	10 - 27	4 - 18	6 - 26	8 - 24	4 - 26
	Option	N/A	N/A	N/A	0	0	N/A	N/A
Total		0	2 - 13	10 - 27	4 - 18	6 - 26	8 - 24	4 - 26
Properties Impacted (Number)								
Residential	Alternative	0	0	0	0	0	0	0
	Option	N/A	N/A	N/A	0	0	N/A	N/A
Commercial	Alternative	0	32	40	38	39	38	40
	Option	N/A	N/A	N/A	0	0	N/A	N/A
Total		0	32	40	38	39	38	40
Right-of-Way Required (Acres)								
Alternative		0	1.12 - 3.10	4.76 - 6.64	2.18 - 5.78	3.07 - 7.23	3.03 - 4.85	2.36 - 6.88
Option		N/A	N/A	N/A	0.16	0.11	N/A	N/A
Total		0	1.12-3.10	5.21-7.26	2.34 - 5.94	3.18 - 7.34	3.03 - 4.85	2.39 - 7.20
Woodland (Acres)								
Alternative		0	0.08	0.08	0.80	0.80	0.80	0.80
Option		N/A	N/A	N/A	0.00	0.00	N/A	N/A
Total		0	0.08	0.08	0.80	0.80	0.80	0.80
Estimated Cost (Millions)*		0\$	\$30-\$40	\$75-\$85	\$55-\$65	\$70-\$80	\$60-\$70	\$180-\$200

TSM/TDM - Transportation Systems Management /
 Transportation Demand Management
BRT - Bus Rapid Transit
NB - Northbound
SB - Southbound

Note: The following resources will not be impacted by the MD 97 Montgomery Hills Project Planning Study:
Streams, Wetlands, Floodplains, Chesapeake and Atlantic Coastal Bay Critical Areas
 *Ranges for cost estimates for the roadway include, but are not limited to: preliminary engineering, right-of-way acquisition, roadway construction, utility, and maintenance of traffic. Tunnel cost estimate includes fire, ventilation, long-term drainage systems, retaining walls at the entrance of the tunnel, etc. in addition to cost estimates for the roadway.

Appendix A - Measures of Effectiveness



Measures of Effectiveness	Increment to Measure MOE	Alternative 1: No Build 3 Lanes NB, 3 Lanes SB, center reversible lane	Alternative 2: TSM/TDM 3 Lanes NB, 3 Lanes SB, center reversible lane	Alternative 3: Master Plan 3 to 4 lanes NB, 4 lanes SB, center median	Alternative 4: 3 lanes NB and SB, center median	Alternative 5: 3 lanes NB, 4 lanes SB, center median	Alternative 6: BRT 3 lanes NB, 3 lanes SB, 2 center bus lanes	Alternative 7: Georgia Avenue Tunnel 6 surface lanes (3 NB, 3 SB) 4 tunnel lanes (2 NB, 2 SB)
Automobile Accessibility								
Does the alternative design result in a negative, neutral, or positive change in travel time by vehicle?	Negative, Neutral, Positive (NNP)	Neutral	Neutral	Neutral	Negative	Negative	Negative	Positive
Does the alternative design result in a negative, neutral, or positive change in vehicular queue lengths?	Time Duration (multiple locations)	AM	Neutral	Negative	Negative	Negative	Negative	Positive
		PM	Neutral	Negative	Negative	Negative	Negative	Positive
Pedestrian Accessibility								
Pedestrian Level of Comfort (LOC)	Letter Grade	E	B	B	B	B	B	B
Does the alternative introduce a pedestrian refuge area for crossing Georgia Avenue?	Yes/No	No	No	Yes	Yes	Yes	No	Yes
Does the alternative raise or lower the distance to travel from curb to curb at Georgia Avenue crosswalks?	Distance	78'- 98' total crosswalk distance	100'- 115' total crosswalk distance	33' – 55' sidewalk to median 95'-118' total crosswalk distance	38' – 50' sidewalk to median 94'- 118' total crosswalk distance *105'-134' queue jump total crosswalk distance	38' – 60' sidewalk to median 105'- 115' total crosswalk distance *115'-134' queue jump total crosswalk distance	33' to station platform 130' total crosswalk distance	45' – 62' sidewalk to median 95'- 110' total crosswalk distance
Does the alternative decrease or increase the number of crossings? (there are currently five signalized intersections for pedestrians to cross Georgia Avenue)	NNP/Count	Neutral	Neutral	+1	Neutral	Neutral **Neutral (+1, -1)	Neutral	Neutral
16th Street skewed ramp modification closed; new alignment is signaled right turn	Yes/No	No	No	No	Yes	Yes	Yes	Yes
Bicycle Accessibility								
Bicycle Level of Comfort (LOC)	Letter Grade	E	B	D	B	B	B	B
Is the alternative consistent with SHA bicycle standards?	Yes/No	Yes	Yes	No	Yes	Yes	Yes	Yes
Transit Accessibility								
Does the alternative allow bus queue jumps?	Yes/No	No	Yes	No	Yes	Yes	No	No
Does the alternative provide an opportunity for Transit Signal Prioritization (TSP) for buses?	Yes/No	No	Yes	Yes	Yes	Yes	Yes	Yes
Does the alternative provide dedicated on-street bus lanes?	Yes/No	No	No	No	No	No	Yes	No
Will the alternative have a negative, neutral or positive effect on vehicular access to the Metro station?	NNP	Neutral	Neutral	Positive	Positive	Positive	Positive	Positive
Safety								
Number of Access Points	Count	22	17	17	18	18	18	17
Vehicle Conflict Point Analysis	Count	311	277	158	130	130	302	131
Does the alternative offer a safety buffer?	Yes/No	No	Yes	Yes	Yes	Yes	Yes	Yes
Does the alternative decrease, keep neutral, or increase the number of access points?	NNP/Counts	Neutral	-6	-6	-3	-5	-3	-3
Does the alternative introduce a median (therefore preventing left turns from non-signalized access points)?	Yes/No	No	No	Yes	Yes	Yes	No	Yes
Does the number of signalized crosswalks decrease, stay the same, or increase?	NNP/Count	Neutral	Neutral	+1	Neutral	Neutral	Neutral	Neutral
16th Street skewed ramp modification closed; new alignment is signaled right turn	Yes/No	No	No	No	Yes	Yes	Yes	Yes
Other Considerations								
Will the alternative lead to aesthetic improvements along the MD 97 corridor?	Yes/No	No	No	Yes	Yes	Yes	No	Yes
Is the level of effort needed to construct the alternative low, medium or high?	Low, Medium, High	N/A	Low	Medium	Medium	Medium	Medium	High
Estimated Cost***	Dollar Amount (millions)	\$0	\$30-\$40	\$75-\$85	\$55-\$65	\$70-\$80	\$60-\$70	\$180-\$200
Number of Impacted Properties	Count	0	32	40	38	39	38	40
Number of Displacements	Count	0	2	10	4	6	8	4
Number of Potential Displacements	Count	0	11	17	14	20	16	22
Number of Impacted Parking Spaces / Total Available Parking Spaces****	Count	0	37 / 485	62 / 485	64 / 485	67 / 485	61 / 485	78 / 485

Notes: *Total when Option A (Queue Jumps) is chosen

**Total when Option B (Closure at Seminary Road) is chosen

***Ranges for cost estimates for the roadway include, but are not limited to: preliminary engineering, right-of-way acquisition, roadway construction, utility, and maintenance of traffic. Tunnel cost estimate includes fire, ventilation, long-term drainage systems, retaining walls at the entrance of the tunnel, etc. in addition to cost estimates for the roadway.

**** Total Available Parking Spaces calculation includes parking spaces for properties directly adjacent to MD 97 and County-owned parking lots in the study area (between Forest Glen Road and 16th Street).

TSM/TDM - Transportation Systems Management / Transportation Demand Management

BRT - Bus Rapid Transit

NB - Northbound

SB - Southbound

Please use this space for notes or questions about the Alternatives and Options under consideration for MD 97.

Alternative 1. No-Build

Alternative 4. Three Lanes Northbound (NB) and Southbound (SB)

Alternative 7. Georgia Avenue Tunnel

Alternative 2. Transportation Systems Management (TSM)/Transportation Demand Management (TDM)

Alternative 5. Three Lanes NB and Four Lanes SB

Option A: Queue Jumps/Transit Signal Priority (applicable to Alternatives 4 and 5)

Alternative 3. Master Plan

Alternative 6. Bus Rapid Transit

Option B: Signal Relocation/Modification (applicable to Alternative 5)

Appendix B - Stakeholders Group

Stakeholders Group			
	Last Name	First name	Association
1.	Martin	Ted	Forest Estates Civic Association
2.	Morla	Mario	Church/Latino Community – Iglesia La Luz Del Mundo
3.	Eisner	Bart	Eisner Co
4.	Ditzler,	Brian	Woodside Park Civic Association
5.	Hawthorne	Rev. Joel	Montgomery Hills Baptist Church
6.	Owusu-koko	Kimberly	Government & Community Relations Specialist, Holy Cross Hospital
7.	Clarke	Troy	Woodlin E.S.
8.	Friedrich	Ron	Church / Disabled Community - Christ Lutheran Church of the Deaf
9.	Middaugh	Michael	Calvary Lutheran
10.	Olivetti	Phil	Linden Civic Association
11.	Kristie	Tom	Resident
12.	Mack	Linda	Business Owner / Bike Proponent – Silver Cycles
13.	Brosnan	Woody	Resident
14.	Redicker	Jane	Greater Silver Spring Chamber of Commerce
15.	Brown	Stacey	Business Owner - Sign-A-Rama
16.	Wexler	Andy	Member of Transp. Man. District - Advisory Group to MC
17.	Marks	Cheinan	Resident / Bike Proponent
18.	Dunn	Stephen	Resident / Commuter

Appendix C - Summary of Public Workshop Comments

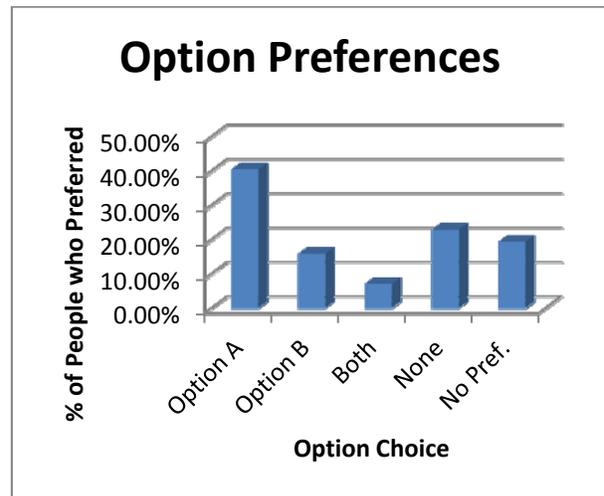
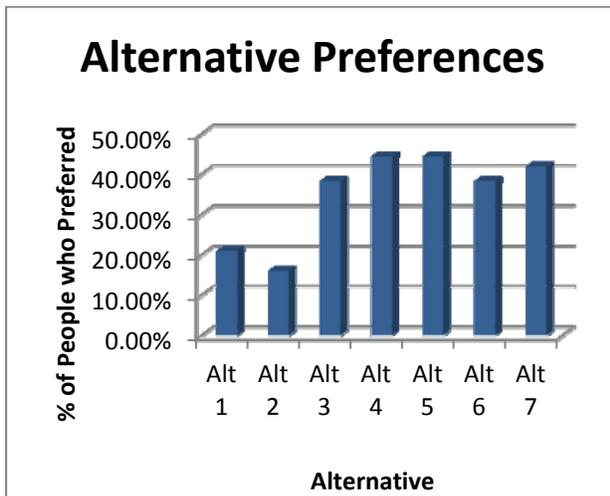
MD 97 Montgomery Hills Project Planning Study Summary of June 25, 2013 Alternatives Public Workshop Comments

The Alternatives Public Workshop for the MD 97 Montgomery Hills Project Planning Study was held on June 25, 2013. The following alternatives and options were presented:

- Alternative 1: No-Build
- Alternative 2: Transportation Systems Management (TSM)/Transportation Demand Management (TDM)
- Alternative 3: Master Plan
- Alternative 4: Three Lanes Northbound (NB) and Southbound (SB)
- Alternative 5: Three Lanes NB and Four Lanes SB
- Alternative 6: Bus Rapid Transit
- Alternative 7: Georgia Avenue Tunnel

- Option A: Queue Jumps/Transit Signal Priority
- Option B: Signal Relocation/Modification

A total of 102 comment cards were received (at the workshop and within the following 30-day comment period). Of those, 81 comment cards contained responses to the survey asking which alternatives and options are supported by the public. The charts below show the results of the survey.



Build Alternatives 3, 4, 5, 6 and 7 received essentially even public support, falling within a range of zero to five points of each other (31-36 selections, or 38%-44%).

Alternatives 1 and 2 offer minimal changes to MD 97 corridor. Based on the results above, most people who filled out comment cards would like to see one of the preliminary build alternatives carried forward.

MD 97 Montgomery Hills Project Planning Study
Summary of June 25, 2013 Alternatives Public Workshop Comments

Public Comments

Concern for local/neighborhood traffic

- Concern cars will turn on Seminary, through 2nd Ave, Stratton, or Rockwood, to get to 16th Street
- Cut through traffic in alley
- Need restrictions on cut through on 2nd Street from 16th Street to Seminary, especially during rush hour
- All alternatives cut off access to Columbia Blvd from Seminary Road
- Concerned with cut through traffic
- Corwin Drive needs to close at alleyway to stop too much cut through traffic heading to and from dry cleaner and Woodside Deli
- Need bypass for drivers accessing beltway at Forest Glen without driving through neighborhoods on Georgia Ave

Signalized Intersection at Flora Lane

- Support signal at Flora
- Like signal at Flora
- Combine BRT with traffic light at Flora with tunnel
- No traffic at Flora SB, another signal will impact traffic flow, prefer median from Locust past Flora
- Does not support signal at Flora, it is a quiet road and introduces additional traffic signal

Median and Left Turn Movements

- Median will encourage ped to cross between crosswalk
- Support median
- Like allowing left turns
- Like left turns, preserve island for SWM
- Support left turn movements
- Don't support BRT because it takes away left-turn, which will push even more traffic into residential neighborhoods
- Support median and left turns
- Provide grassy median on Georgia Ave

Alternative 2 (TSM/TDM)

- Apply TSM-TDM to all Alts

Alternative 6 (BRT)

- Don't support BRT because it takes away left-turn, which will push even more traffic into residential neighborhoods
- BRT not good for peds
- Would there be express buses going to downtown Silver Spring? Could there be express buses to downtown DC, Bethesda?

MD 97 Montgomery Hills Project Planning Study
Summary of June 25, 2013 Alternatives Public Workshop Comments

Alternative 7 (tunnel)

- Like tunnel for 16th Street. It moves traffic signal away from the 4 houses
- Tunnel will open surface for better use
- Support tunnel with car wash proposed access
- Replace most structures along 97 and redesign corridor completely, that's why tunnel is favored
- Tunnel is bad idea, cars will be speeding and there will be more noise, other options are ped friendly and cheaper
- Tunnel would be too expensive
- Tunnel does not help traffic
- Strongly do not support tunnel
- Does not support tunnel
- Tunnel impacts historical civil war memorial at the corner of Georgia Ave and Grace Church
- Tunnel not supported, closes access to Grace Church
- Tunnel impact Grace Church access
- BRT makes it more difficult to cross
- Like BRT and tunnel but construction will be too long
- Would tunnel include pedestrian tunnel at Forest Glen Metro?

Combine Alternatives 6 and 7

- Combine BRT and tunnel, change tunnel to allow turn off/exit 16th Street
- Combine BRT with traffic light at Flora with tunnel
- Combine BRT and Tunnel, more consideration for narrowing and not widening Georgia Ave should be considered with tunnel option for more bike and ped provision
- Combine BRT and tunnel

Pedestrian Safety

- Support wider sidewalk
- Support ped provisions
- Pedestrian crossing concern for Seminary Place shops, provide ped over and underpass
- Support grass buffer, sidewalks
- Support walkability, grass buffer
- Alternatives facilitate transition to an environment away from car-oriented, support ped provisions
- Support ped provisions
- Support ped provisions
- Support ped provisions
- Median will encourage ped to cross between crosswalk
- Need more ped friendly street
- Connect sidewalk on 16th Street and Georgia Ave
- Support ped

MD 97 Montgomery Hills Project Planning Study
Summary of June 25, 2013 Alternatives Public Workshop Comments

Bicycle Accommodations

- Support bike provisions
- Alternates facilitate transition to an environment away from car-oriented, support bike provisions
- Support bike provisions
- Support signal at Flora
- Support bike provisions
- Support bike provisions
- Support bike
- Support bike lanes
- Bike slow down traffic even with designated lanes. Bikes can use residential streets
- Bike safety is a big concern
- Bike is important
- Support bike
- Separate bike lanes
- Physically separate bikes from cars
- Separate bike lanes
- Bike lanes are great idea but will not induce me to use Georgia Ave
- MP no bike provisions
- Where would bike go?

Transit

- Glad bus stop will be kept
- Time to shift to transit. GOOD JOB
- Encourage bus
- Not in favor of option A. Queue jumps will be abused
- Queue jumps totally unclear

Commercial Development/Impacts

- What steps are we taking to improve commerce? Stores are run down, building are junky...
- Replace most structures along 97 and redesign corridor completely, that's why tunnel is favored
- Reducing commercial corridor
- "Sense of place" requires attention to development also
- Concerned that beautification and left-turn provisions don't justify taking Citibank
- Avoid impact to CitiBank
- LOD impacts Grace Episcopal Church, Cemetery, and Civil War historical markers
- Fair compensation available for 9400-950 blocks of Woodland Drive on the west side?
No impacts on Georgia Ave between Grace Church and Seminary Place
- Other than Alts 1 and 2, too many impacts

MD 97 Montgomery Hills Project Planning Study
Summary of June 25, 2013 Alternatives Public Workshop Comments

Commercial Development/Impacts (continued)

- Please do not impact Montgomery Hills Baptist Church
- Support all but impacts to the wall renders home inaccessible
- Property compensation process and consideration
- “Sense of place” requires attention to development also
- Please do not impact Montgomery Hills Baptist Church

Accessibility

- Does not want to reduce accessibility
- Support all but impacts to the wall renders home inaccessible
- Car wash new access not preferred, traffic will back up in backyards
- Does not support shared access with car wash
- Do not close 16th Street
- Maintain access during construction
- Preserve access from 16th to Hanover, it is important ingress into neighborhood
- MP alternative must close Luzerne Ave, Corwin Ave, or the impact will be untenable to resident of Luzerne

Traffic

- Congestion on NB Georgia Ave for I-495 EB traffic not properly addressed
- Concerned with 16th Street closure. It is one of the few stretches without traffic
- Only concern is traffic during construction
- Traffic is a big concern
- Improve signal timing

Forest Glen

- Take a look at traffic signal at 97/Forest Glen now
- Completion of Forest Glen passageway is important
- Request for providing turn lanes from Georgia Ave to Forest Glen

Parking

- Lack of parking in area for access to businesses

Aesthetics

- Provide grassy median on Georgia Ave
- Aesthetic improvements are essential
- Support aesthetic improvements

Other Comments

- Young children in Woodland neighborhood
- Trash concern at bus stops
- Metro is too slow
- Ensure Snider’s is not negatively affected
- Support barrier between SWs and Georgia Ave

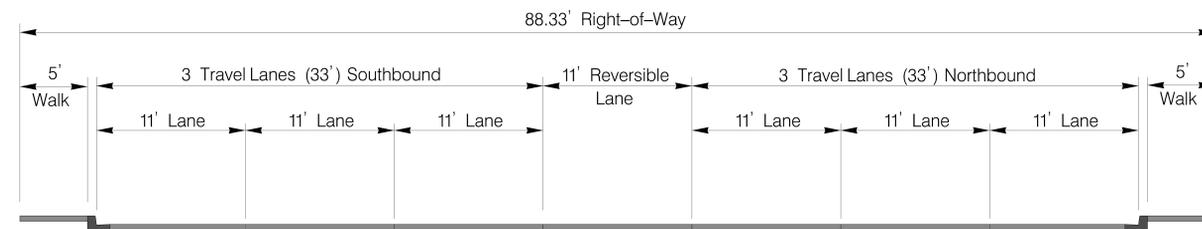
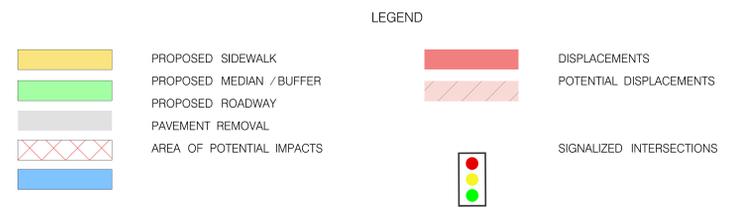
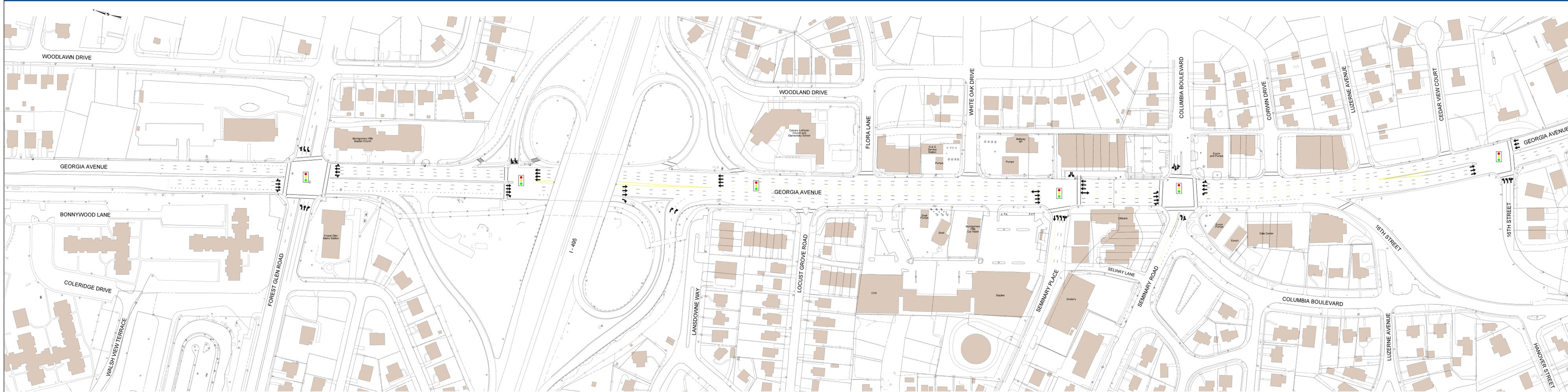
MD 97 Montgomery Hills Project Planning Study
Summary of June 25, 2013 Alternatives Public Workshop Comments

Other Comments (continued)

- Improve also quality of life not just traffic
- Metro too slow
- Need rational intersection at Linden and Brookville
- The MP for the neighborhood should also be redone
- No consideration to neighborhood
- Request to remove the Siena School from maps, clearly explaining impact to Church in reference to area of potential impacts
- Need protection for ped in front of Snider's
- What do citizens gain? Similar study was done 4 years go
- All build alternatives is best alternative
- Bit piece of all
- No explanation on how comments are reviewed
- Verify street name Woodland Drive north of Forest Glen Rd. its labeled Woodlawn
- Retiring in 4 years to West Coast but appreciate that problem is noticed
- Color code on options map not clear
- Send mail electronically
- Table 2(Traffic) and Table 4(Summary of Impacts) were very busy
- Cost/benefit rationales for alternatives, especially tunnel. Language is too bureaucratic, not that many people understand queue, sense of place
- Use larger words for brochure
- Support signal provisions
- Speed camera on Georgia Ave to capture the idiots who run the red light at Forest Glen and Georgia Ave, signal at Americanna Finnmark
- Meeting very informative

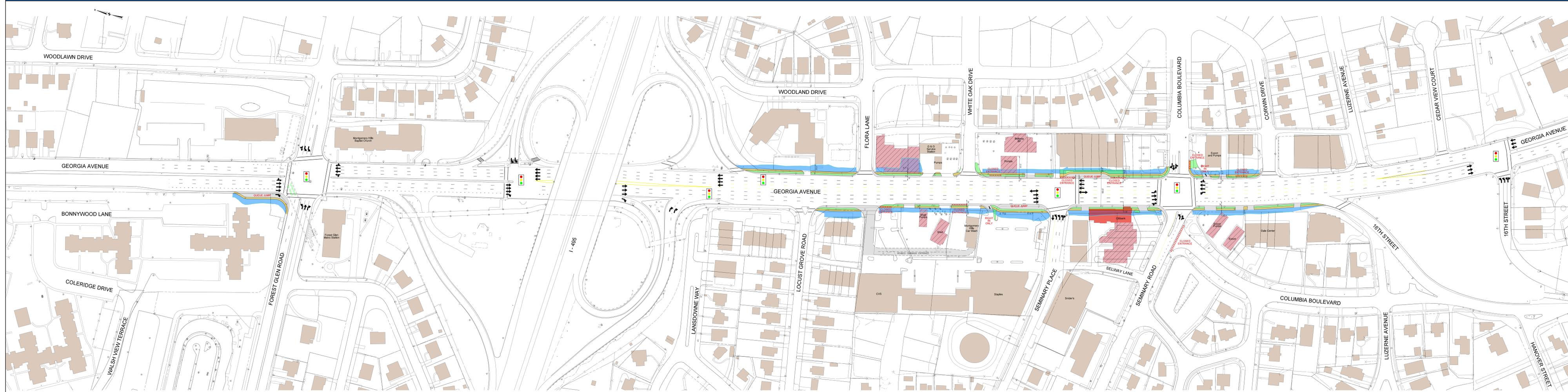
Appendix D - Preliminary Alternatives Mapping

Alternative 1 - No Build



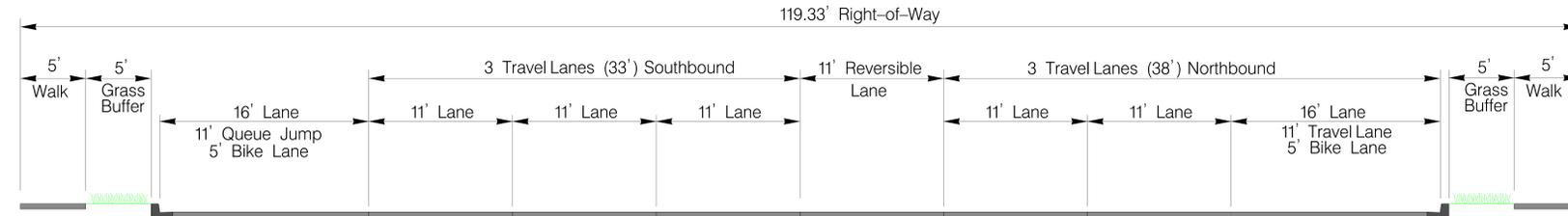
Existing Typical Section

Alternative 2 - Transportation System Management (TSM) / Transportation Demand Management (TDM)



LEGEND

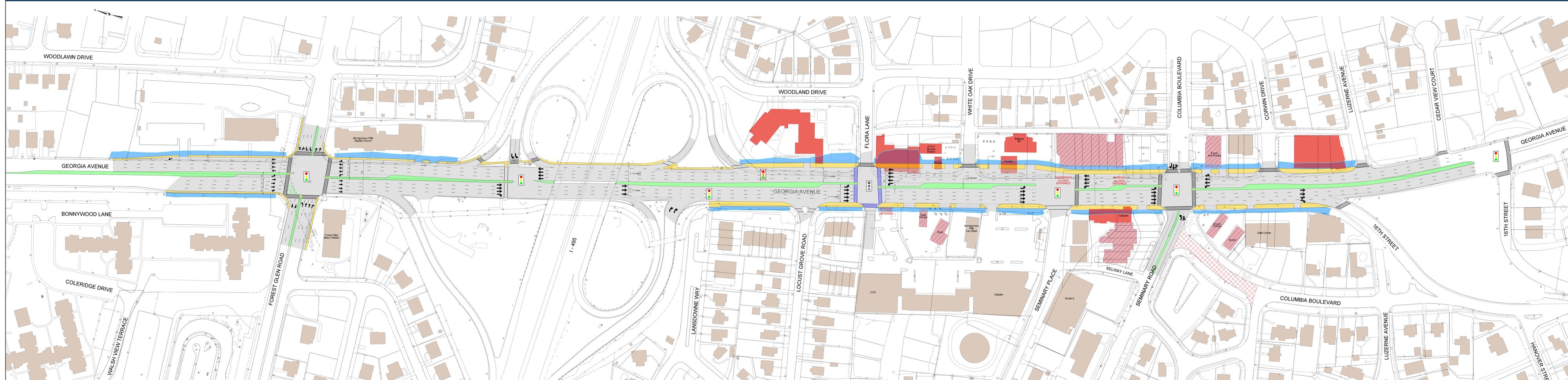
	PROPOSED SIDEWALK		DISPLACEMENTS
	PROPOSED MEDIAN / BUFFER		POTENTIAL DISPLACEMENTS
	PROPOSED ROADWAY		SIGNALIZED INTERSECTIONS
	PAVEMENT REMOVAL		
	AREA OF POTENTIAL IMPACTS		



TSM-TDM Typical Section

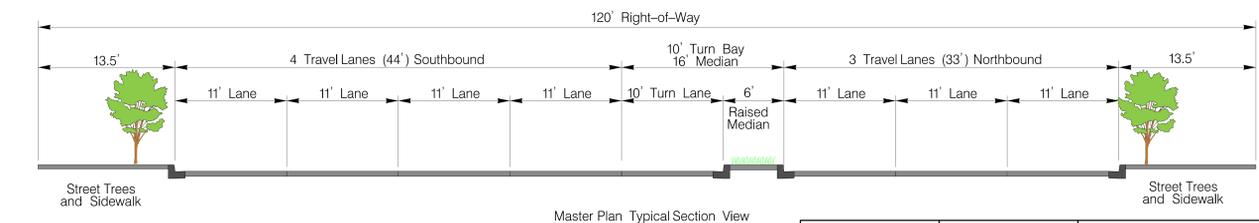
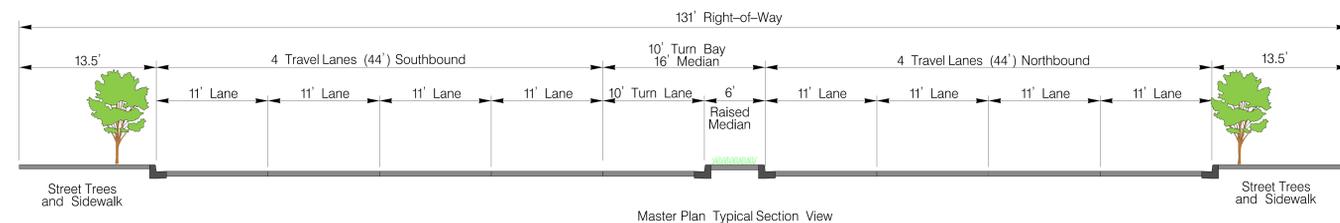
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Alternative 3 - Master Plan

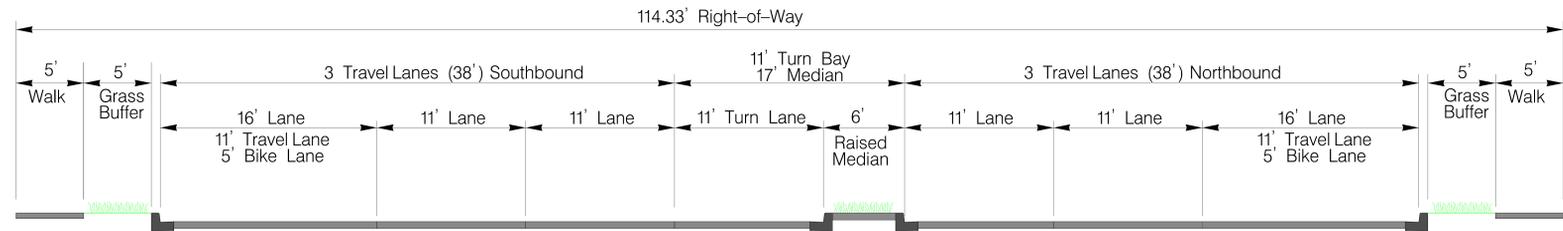
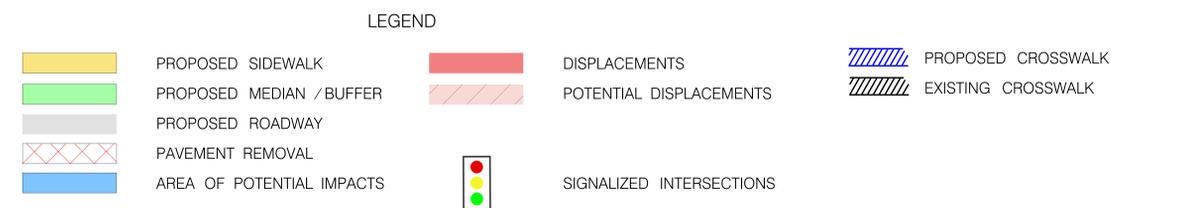
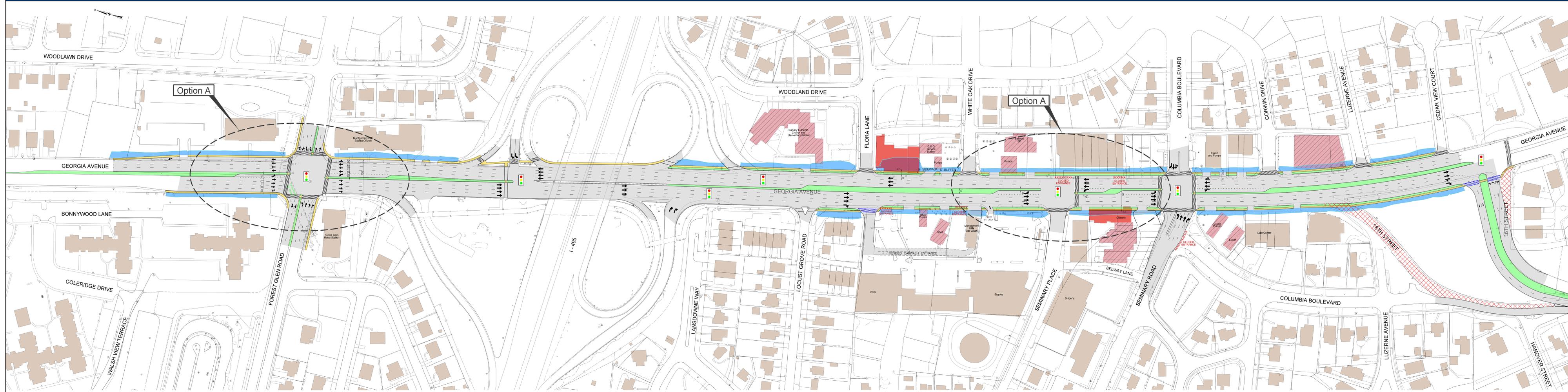


LEGEND

- PROPOSED SIDEWALK
- PROPOSED MEDIAN / BUFFER
- PROPOSED ROADWAY
- PAVEMENT REMOVAL
- AREA OF POTENTIAL IMPACTS
- PROPOSED CROSSWALK
- EXISTING CROSSWALK
- REMOVAL SIGNALIZED INTERSECTION
- DISPLACEMENTS
- POTENTIAL DISPLACEMENTS
- SIGNALIZED INTERSECTIONS
- POTENTIAL SIGNALIZED INTERSECTION



Alternative 4 - 3 Lanes Northbound / 3 Lanes Southbound



3 Northbound / 3 Southbound Typical Section

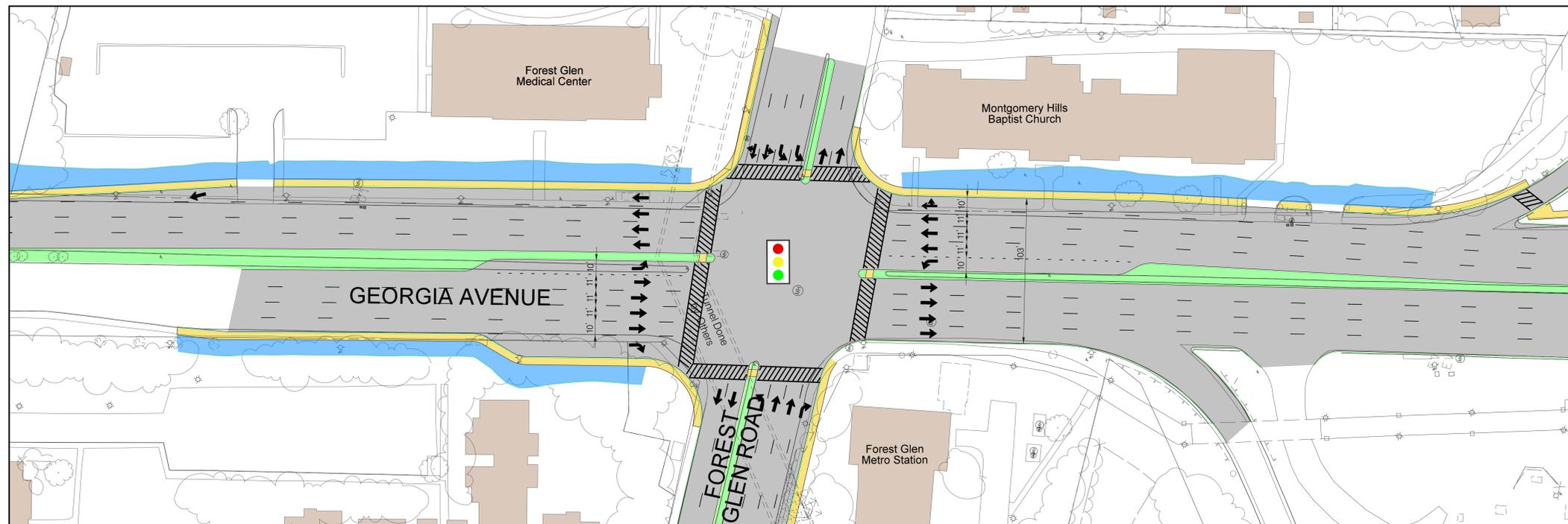
FOR OPTION A, SEE SEPARATE DISPLAY BOARD

ALTERNATIVE 4

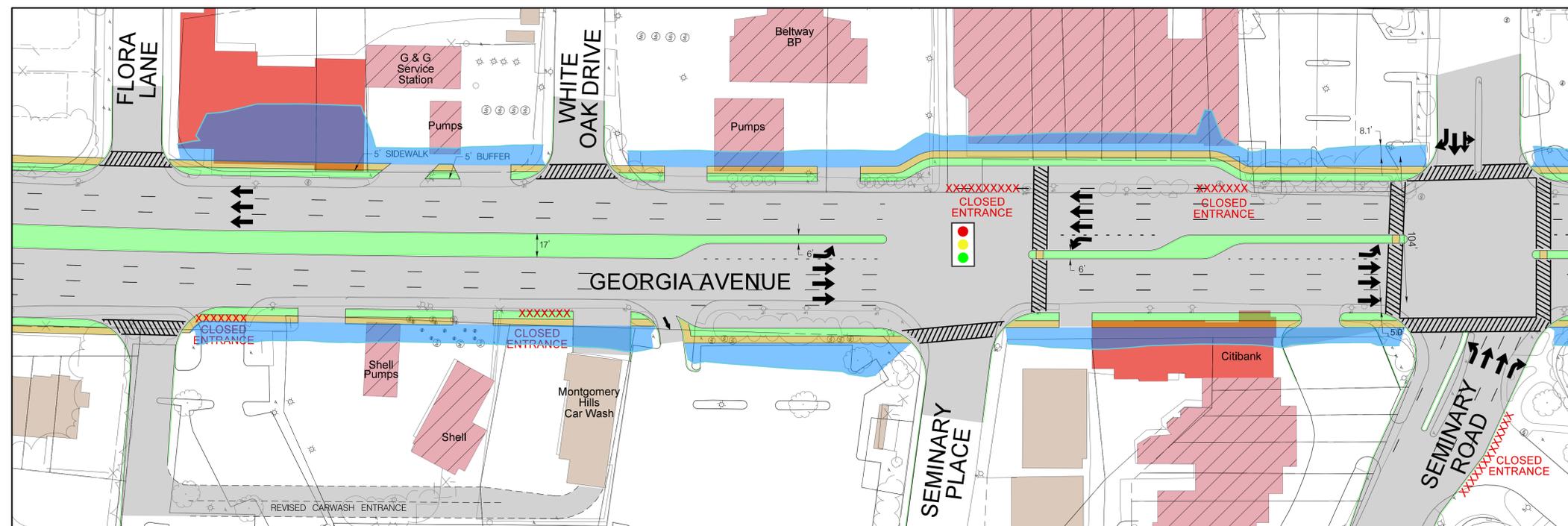
JUNE 25, 2013

SCALE: 1" = 60'

Alternative 4 Options



Option A - Queue Jump at Forest Glen Road



Option A - Queue Jump at Seminary Place

LEGEND

- | | | | |
|--|---------------------------|--|--------------------------|
| | PROPOSED SIDEWALK | | DISPLACEMENTS |
| | PROPOSED MEDIAN / BUFFER | | POTENTIAL DISPLACEMENTS |
| | PROPOSED ROADWAY | | SIGNALIZED INTERSECTIONS |
| | PAVEMENT REMOVAL | | |
| | AREA OF POTENTIAL IMPACTS | | |

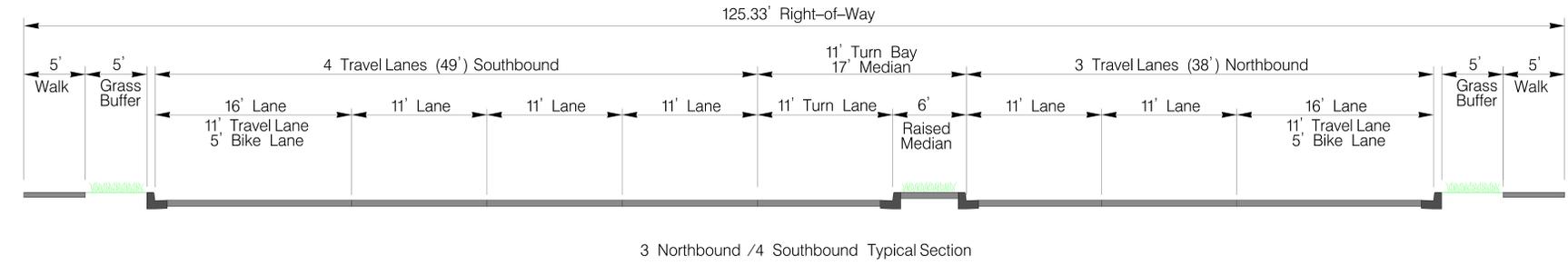
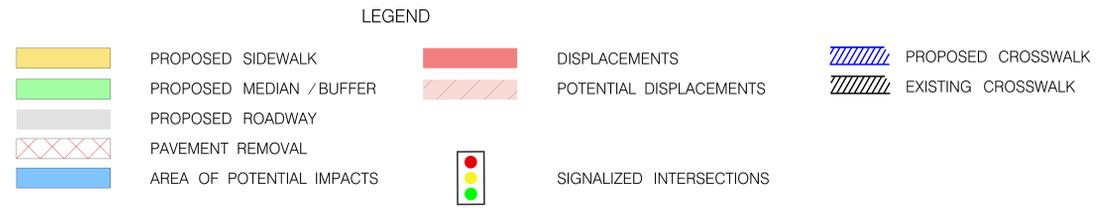
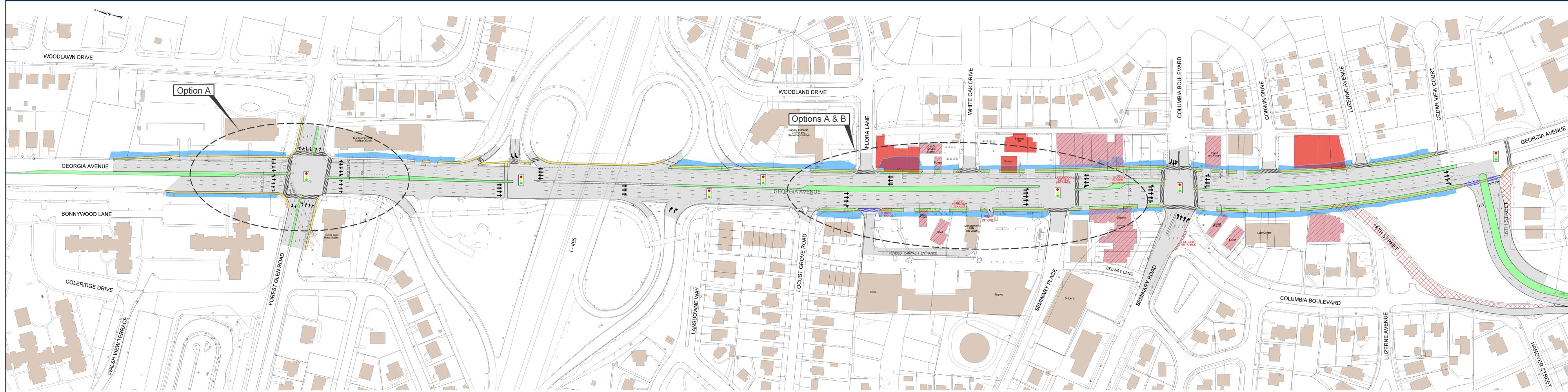


**ALTERNATIVE 4
OPTIONS**

JUNE 25, 2013

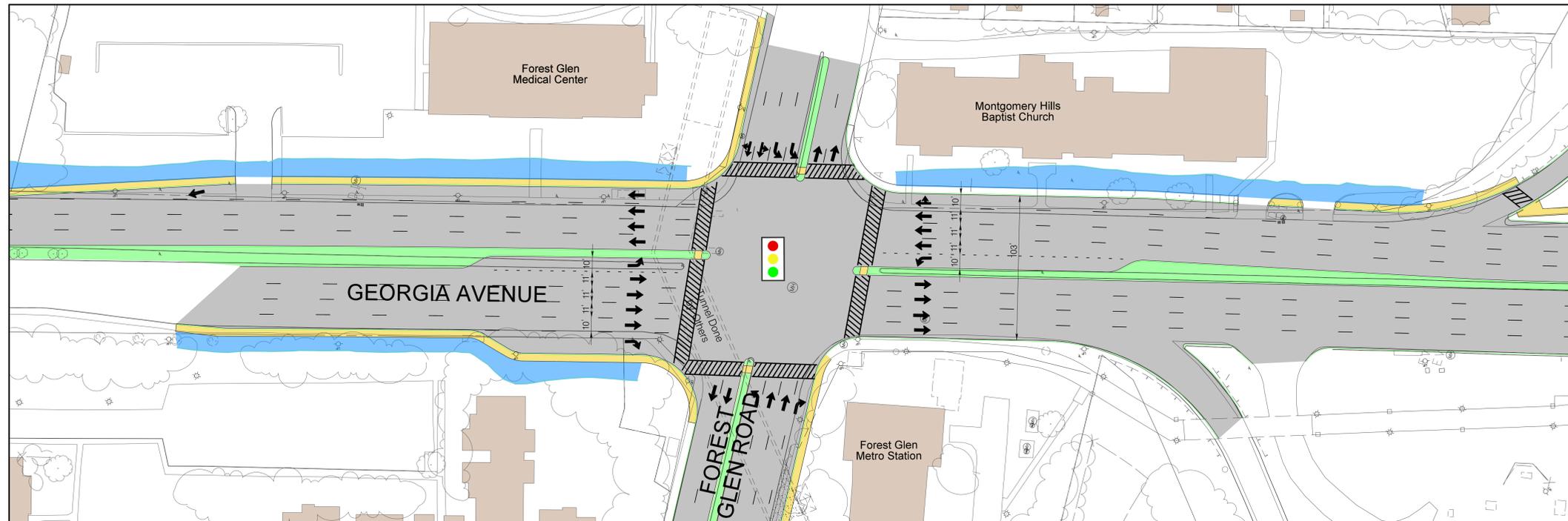
SCALE: 1" = 40'

Alternative 5 - 4 Lanes Southbound / 3 Lanes Northbound

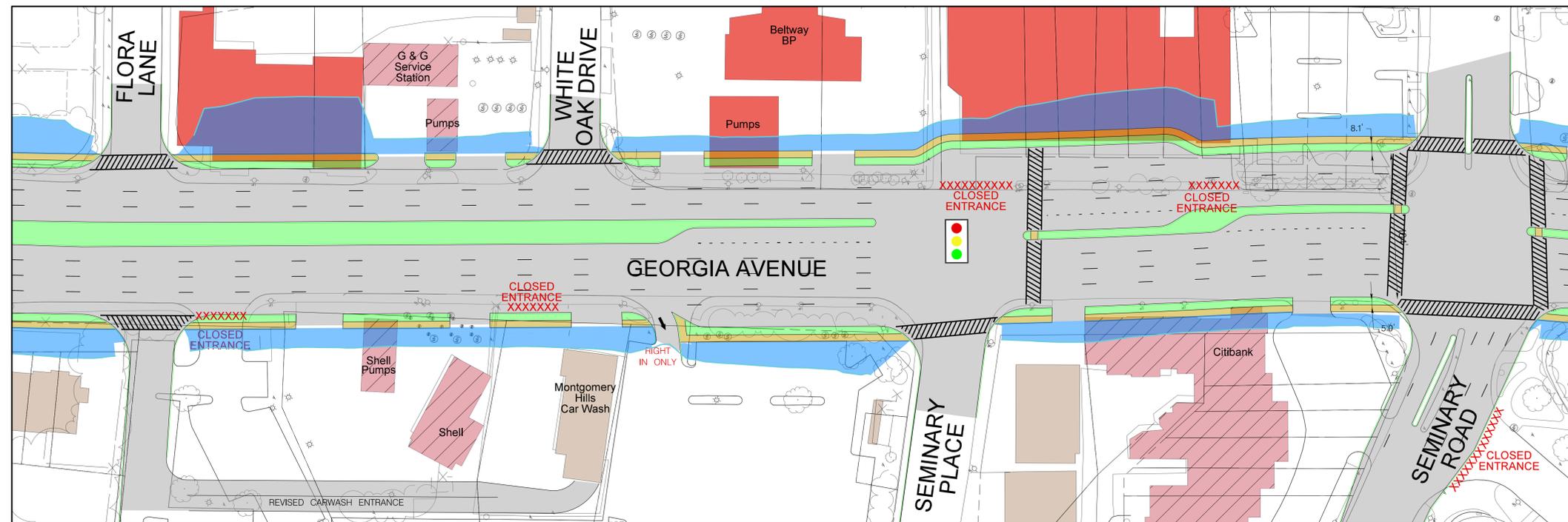


FOR OPTIONS A & B, SEE SEPARATE DISPLAY BOARD

Alternative 5 Options

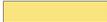
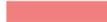
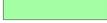


Option A - Queue Jump at Forest Glen Road



Option A - Queue Jump at Seminary Place

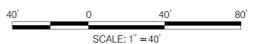
LEGEND

- | | | | |
|---|---------------------------|---|--------------------------|
|  | PROPOSED SIDEWALK |  | DISPLACEMENTS |
|  | PROPOSED MEDIAN / BUFFER |  | POTENTIAL DISPLACEMENTS |
|  | PROPOSED ROADWAY |  | SIGNALIZED INTERSECTIONS |
|  | PAVEMENT REMOVAL | | |
|  | AREA OF POTENTIAL IMPACTS | | |

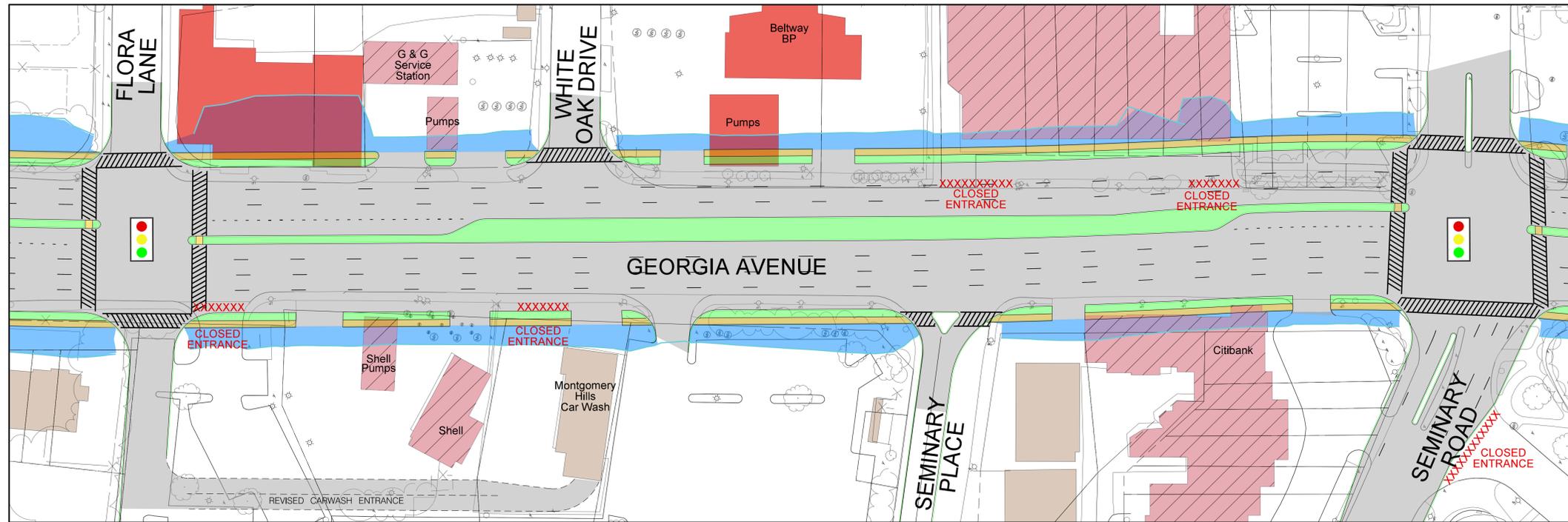


ALTERNATIVE 5
OPTIONS

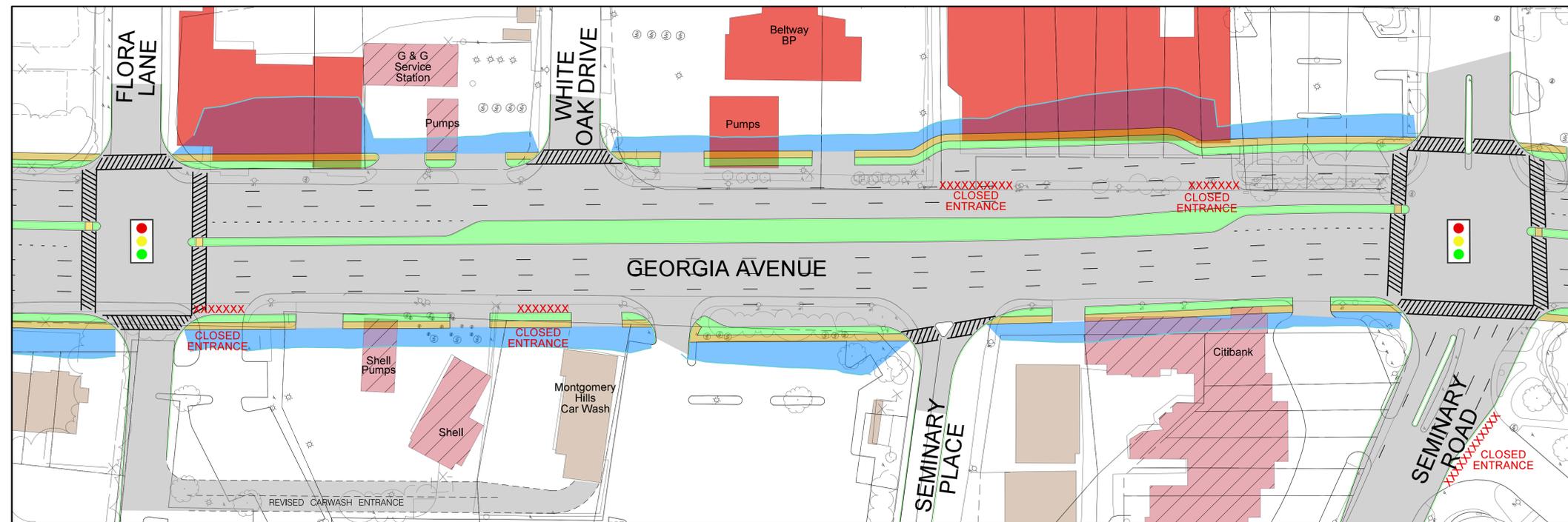
JUNE 25, 2013



Alternative 5 Options

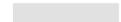


Option B – Signal Relocation/Modification



Options A/B – Signal Relocation/Modification with Queue Jumps

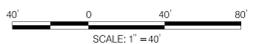
LEGEND

- | | | | |
|---|---------------------------|---|--------------------------|
|  | PROPOSED SIDEWALK |  | DISPLACEMENTS |
|  | PROPOSED MEDIAN / BUFFER |  | POTENTIAL DISPLACEMENTS |
|  | PROPOSED ROADWAY |  | SIGNALIZED INTERSECTIONS |
|  | PAVEMENT REMOVAL | | |
|  | AREA OF POTENTIAL IMPACTS | | |

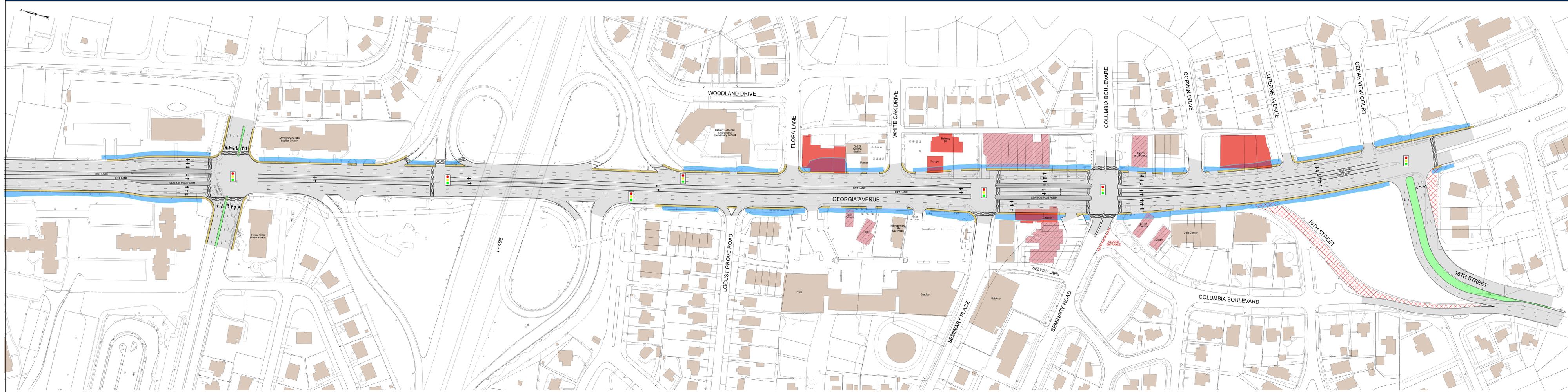


ALTERNATIVE 5
OPTIONS

JUNE 25, 2013

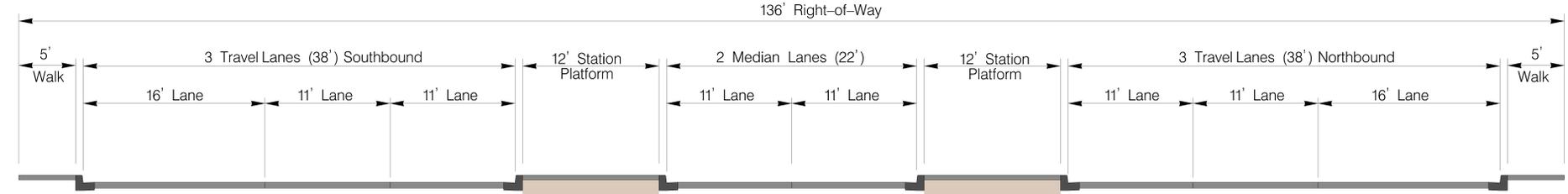


Alternative 6 - Bus Rapid Transit (BRT)



LEGEND

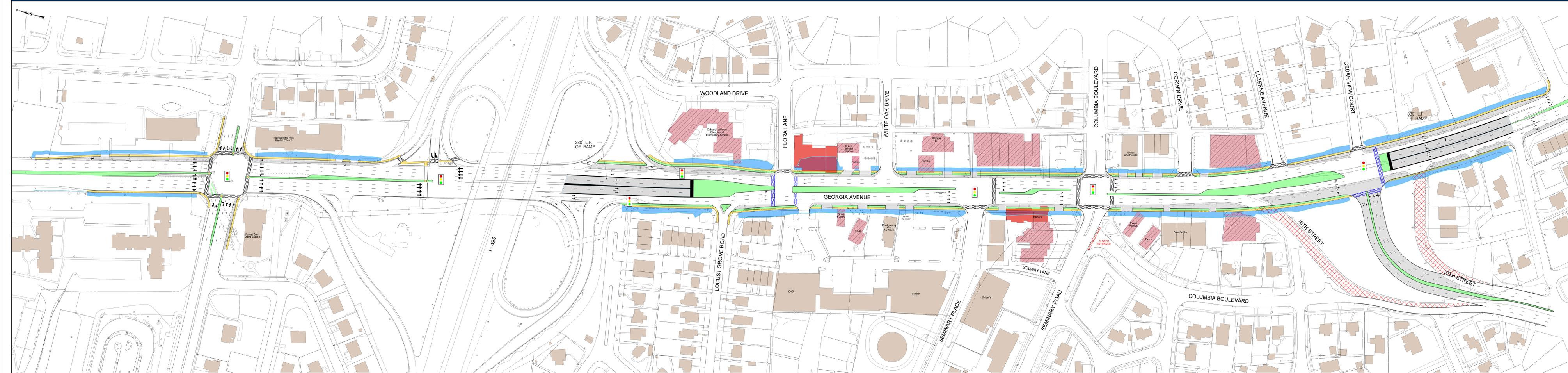
	PROPOSED SIDEWALK		DISPLACEMENTS		PROPOSED STATION PLATFORM
	PROPOSED MEDIAN / BUFFER		POTENTIAL DISPLACEMENTS		PROPOSED CROSSWALK
	PROPOSED ROADWAY				EXISTING CROSSWALK
	PAVEMENT REMOVAL				
	AREA OF POTENTIAL IMPACTS				



MNCPPC BRT Typical Section

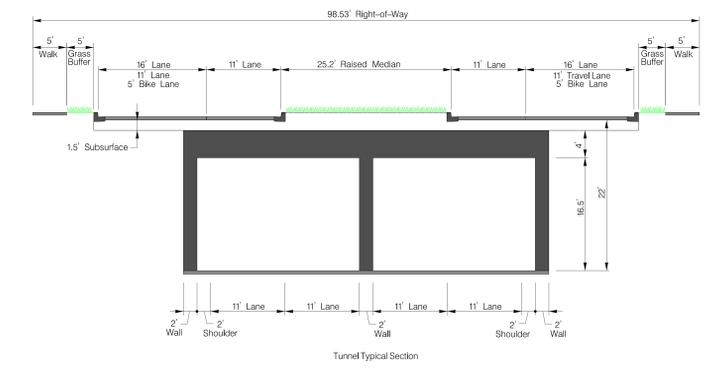
			ALTERNATIVE 6
			JUNE 25, 2013
			SCALE: 1" = 60'

Alternative 7 - Georgia Avenue Tunnel



LEGEND

	PROPOSED SIDEWALK		DISPLACEMENTS		PROPOSED CROSSWALK
	PROPOSED MEDIAN / BUFFER		POTENTIAL DISPLACEMENTS		EXISTING CROSSWALK
	PROPOSED ROADWAY		SIGNALIZED INTERSECTIONS		
	PAVEMENT REMOVAL				
	AREA OF POTENTIAL IMPACTS				



TOTAL LENGTH OF TUNNEL - 2150 +/-